

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 2, 4-6, 9-13, 17-22, 26-28, 30-32, 36-44, 51-69, 75 and 76 are pending in the present application. Claims 1, 5, 18, 19, 30, 51 and 56 have been amended by the present amendment.

In the outstanding Office Action, Claims 5, 6 and 30 were objected to; and the claims were rejected under 35 U.S.C. § 103(a) as unpatentable over a variety of references (see items 4-20 in the outstanding Office Action).

Applicant thanks the Examiner for the courtesy of an interview extended to Applicants' representative on November 7, 2003. During the interview, it was indicated that by amending independent Claims 1, 18, 19, 51 and 56 to recite that the heater base is monolithically formed of a ceramic material would probably distinguish the claims over the primary reference Logan et al. pending a further detailed review. Accordingly, each of these claims have been amended to recite that the heater base is monolithically formed of a ceramic material. On the contrary, as discussed during the interview, Logan et al. discloses a plurality of elements that are bonded together, and thus do not teach or suggest the heater base monolithically formed of a ceramic material. Further, during the interview, the Examiner indicated the cited references by Niori et al. (U.S. Patent Nos. 5,280,156; 5,800,618; 6,101,969 and 6,197,246(B1)) may teach and a heater based monolithically formed of a ceramic material. However, it is respectfully noted that none of the U.S. Patents by Niori et al. teach or suggest the claimed fluid passage being provided in the heater base below the heater in which the fluid passage has fluid inlet and fluid outlets formed in a lower surface of the heater base.

Further, according to the system of the present invention, when the apparatus is stopped for maintenance or because of a problem, it is possible to cool the ceramic heater to room temperature in a short time period. Therefore, the time required for maintenance is shortened, and the driving time of the apparatus is significantly improved. In addition, the time required to clean the apparatus (e.g., immediately after a film forming process) of the unnecessary film adhered to walls of the chamber, whose interior is kept in a vacuum state can also be shortened.

In the devices of Niori et al., there is no discussion about cooling the heater base. Rather, Figure 14 of U.S. Patent No. 6,197,246(B1) merely shows an exhaust part 76. None of the U.S. patents by Niori et al. teach or suggest the claimed heater base monolithically formed of a ceramic material and including the claimed fluid passage. Thus, the advantages of the present invention are not achieved with Niori et al. In addition, it is respectfully submitted that one skilled in the art would not be motivated to combine the fluid passages of Logan et al. with Niori et al., because Logan et al. specifically teaches attaching a separate heat-sink base 70 to the chuck assembly. Thus, combining Logan et al. with Niori et al. would result in a separate heating base being attached to the substrate. This combination differs from the claimed invention which includes a heater base monolithically formed of a ceramic material and including a fluid passage provided in the heater base below the heater (and not separately attached).

Accordingly, it is respectfully submitted independent Claims 1, 18, 19, 51 and 56 and each of the claims depending therefrom are allowable, and the rejections noted in the outstanding Office Action have been overcome.

Further, dependent Claims 42, 55 and 60 have been amended to correspond to features as shown in Figure 12B, in which an internal surface area of the fluid passage is formed by a roughened inner surface. It is respectfully noted Randlett et al. (which was used

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to reject these features) does not teach or suggest the claimed roughened surface. Further, it is respectfully noted these features were indicated as allowable in the Office Action mailed July 3, 2002 (Claims 14 and 15 were indicated as allowable). Accordingly, it is respectfully submitted dependent Claims 42, 55 and 60 further define over the applied art.

In addition, regarding the objection to Claims 5, 6 and 30, Claim 5 has been amended to depend on Claim 1 and Claim 30 has been amended to depend on Claim 18. Accordingly, it is respectfully requested the objection to the claims be withdrawn.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and action to that effect is respectfully requested.

Respectfully submitted,

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